

Intermontanus

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NEWS & ANNOUNCEMENTS

GOLD CHAIN COSTS 68 FROGS

New Delhi: A frog swallowed a gold chain that a woman bathed had left on a river bank, leading to a massacre of many frogs in south-western India, a newspaper reported yesterday.

Relatives of the woman in Thannermukkom, a village in Kerala State, caught the frogs and slit their bellies in search of the 16-gramme chain after the frog that swallowed it leaped back into the water, the *Hindu* newspaper reported. Relatives found the chain in the belly of the 68th frog. (Agencies). [Salt Lake Tribune, Nov. 1, 1992]

SNAKE DIES OF MAN-BITE

Johannesburg: An African cattle-herder bit a huge python to death in a 30-minute battle after the snake dropped on him from a tree and tried to crush him in its coils, a newspaper reported yesterday. Edward Mkize, exhausted but intact, dragged the 3.5 metre, 40-kg snake home skinned it and burned the body, the *Star* newspaper of Johannesburg said. [The Daily Nation, Sept. 19, 1992]

1993 HERP CALENDARS

We have received notice of two 1993 herp calendars that are available. They both feature color photographs for each month. Joe McSharry's calendar consists of 12 photographs all by Joe; the price is \$8.95 each + shipping and handling (\$2.00 for one, \$1.00 each for more than one). Order from Joe McSharry, P.O. Box 19556, Baltimore, MD 21206, (410) 483-3132.

The American Federation of Herpetoculturists calendar has two small photographs per month in addition to the main monthly photo. The photos are from a variety of photographers including several from Jim Bridges (Probably the best herp photographer around). The cost is \$13.95 + shipping (\$2.00 for the first \$0.75 for each additional).

1992 UTAH BUDGET REPORT

A summary of Utah's 1992 budget is as follows:

Income	
membership dues	\$294.00
donations	\$78.50
Debits	
printing	\$134.81
postage	\$116.74
misc	\$5.00
Balance	\$115.95

SEASONAL JOBS AND VOLUNTEER POSITIONS

Approximately 20 volunteer positions are open in 1993 at the American Museum of Natural History's Southwestern Research Station in Portal, Arizona. The volunteer program is run annually and offers students in biological sciences outstanding opportunities to observe and become involved with scientists doing field research. Food and lodging are provided to volunteers in exchange for twenty-four hours per week of routine chores, with the remaining time available for research activities.

The program is open to both undergraduate and graduate students; the latter may pursue their own research projects. Volunteers are needed between 15 March and 1 November 1993. Appointments are for part of this period, with a minimum appointment of six weeks. Applicants for spring positions should submit applications by 15 February 1993, summer volunteers by 1 April 1993, and fall volunteers may apply any time. For applications, write to: Dr. Wade C. Sherbrooke, Director, Southwestern Research Station, American Museum of Natural History, Portal, AZ 85632, (602) 558-2396.

Volunteers are being sought for a population study of the anaconda (*Eunectes murinus*) in the llanos of Venezuela. The project is jointly funded by CITES and Wildlife Conservation International and is being carried out in conjunction with the Venezuelan Wildlife Department (PROFAUNA). This will be the second year of a three-year mark-recapture and radiotelemetry study of snakes on the El Cedral ranch located approximately 200 KM west of San Fernando de Apure.

The work will consist of helping Venezuelan biologists capture and mark snakes during the annual dry season. Schedules are flexible, but volunteers are needed for a minimum stay of two weeks during Jan.-April 1993 and should be willing to sleep in hammocks. Funds are not available to pay for airfare, but food and lodging will be covered while at the study site.

Interested parties should contact John Thorbjarnarson, c/o Wildlife Conservation International, Apartado 39, Calabozo 2312-A, Guárico, Venezuela.

FEATURES

A NEW SUBSPECIES OF GARTERSNAKE IN UTAH

I recently found out about another subspecies of the western terrestrial garter snake, *Thamnophis elegans*, which occurs in Utah. In 1989 Wilmer W. Tanner and Charles H. Lowe described two new subspecies of *Thamnophis elegans*, one from the Little Colorado River basin of Arizona and New Mexico and another from the Upper Colorado River basin of Utah. The new Utah subspecies is named *Thamnophis elegans vascotanneri*. The name honors the late Dr. Vasco M. Tanner who was the chairman of the Department of Zoology at BYU for 33 years beginning in 1925. He conducted several field trips throughout Utah to collect biological specimens. Some of the first specimens of this subspecies of garter snake were collected by him.

Thamnophis e. vascotanneri is "characterized by the absence or modification of the middorsal stripe by dark cross bars, leaving in some specimens only a series of light spots in the dorsal area. This is in contrast to the broad stripe in *arizonae* and the

irregular, indented stripe in typical *vagrans*. Ventrals 158-180, male 164-180 (171.5), female 158-170 (168.0); subcaudals 64-93, male 76-93(85.8), female 64-85 (75.6)" (Tanner and Lowe 1989).

The type specimen (BYU 10245) was collected 18 June 1950 at the junction of Boulder Creek and Huntington river, Emery County, Utah. Paratypes were collected in Carbon, Daggett, Duchesne, Garfield, Grand, Kane, San Juan, Uintah, and Wayne counties. In addition I have seen *T. elegans* that fit this description at two high elevation localities in Washington County.

Tanner and Lowe (1989) also discuss the relationship between drainages and morphological and genetic variation. They suggest *T. elegans* contains more subspecies which are currently undescribed. Dr. Wilmer W. Tanner is currently examining the variation in western garter snakes and it is possible that more subspecies will be described.

The following is a key to the garter snakes of Utah:

1a. Dorsal scales keeled without apical pits; anal single; caudals paired; internasals not divided by rostral; and gulars separate posterior chinshields.....*Thamnophis*..... 2

1b. not as above. not *Thamnophis*

2a. Usually 7 supralabials; solid yellow or white dorsal stripe extending from just behind parietals to tail tip, or nearly so; light lateral stripes; temporals mostly red or reddish; red markings on sides; and venter immaculate. Occurs from about Utah Lake north.*T. sirtalis fitchi**

2b. Usually 8 supralabials; temporals not red; without red markings on sides..... 3

3a. Large black blotches at the back of the head separated by the dorsal stripe; dorsal stripe solid; and posterior margin of labials usually black. Occurs in southeastern Utah....

.....*T. cyrtopsis cyrtopsis*

3b. No large blotches on back of head; dorsal stripe, if present, wavy or indented by blotches; and posterior margins of labials usually not bordered by black.....*T. elegans*..... 4

4a. Dorsal stripe present, but irregular and indented by darker blotches. Occurs in the western half of Utah.....*T. e. vagrans*

4b. Dorsal stripe absent or modified by dark crossbars. Occurs in the eastern half of the state.....*T. e. vascotanneri*

* Tanner and Banta (1966) concluded the *T. sirtalis* in Utah belong to the subspecies *parietalis* not *fitchi* as Fitch and Maslin (1961) determined. Fitch (1980) has maintained his position that Utah *T. sirtalis* belong to the subspecies *fitchi*. I have used *fitchi*'s definition here in order to be consistent with the literature.

_____. 1980. *Thamnophis sirtalis* (Linnaeus) common garter snake. Catalogue of American Amphibians and Reptiles. (270):1-4.

Fitch, Henry S. and T. Paul Maslin. 1961. Occurrence of the garter snake, *Thamnophis sirtalis*, in the Great Plains and Rocky Mountains. University of Kansas Publications, Museum of Natural History. 13(5):289-308.

Utah Association of Herpetologists

Intermontanus

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Tanner, Wilmer W. and Charles H. Lowe. 1989. Variations in *Thamnophis elegans* with descriptions of new subspecies. Great Basin Naturalist. 49(4):511-516.

_____ and Benjamin H. Banta. 1966. A systematic review of the Great Basin reptiles in the collections of Brigham Young University and the University of Utah. Great Basin Naturalist. 26(3-4):87-133.

NOTES

CHARINA BOTTAE (Rubber Boa). **FOOD.** On 6 August 1991 a *Charina bottae* was collected as it crossed a dirt road in Wasatch County, Utah. The road runs adjacent to a creek, through a narrow riparian habitat consisting primarily of *Acer grandidentatum* and *Populus acuminata*. *Quercus gambelii* and *Artemisia tridentata* are the conspicuous plants surrounding the riparian strip. Within 30 minutes of capture the snake regurgitated a newborn *Thomomys talpoides* (Northern Pocket Gopher). By the next morning the snake had regurgitated four more newborn *T. talpoides* (Fig. 1, see page 4) presumably all siblings. The snake measured 400 mm SVL, TL 52 mm, and weighed 46 g; after it had regurgitated the five *T. talpoides*. The newborn *T. talpoides* were identified by Dr. Clyde L. Pritchett and deposited at the Monte L. Bean Life Science Museum, Brigham Young University. The snake was released at the site of capture.

It is often suggested that *C. bottae* are nest raiders, but Van Denburgh (1922. The Reptiles of Western North America. p.642) presented the only evidence of this. Van Denburgh (*ibid.*) reported a *C. bottae* from Carmel had eaten six young mice.

This report is the first to document *Thomomys talpoides* as a prey item of *Charina bottae* and indicates these snakes do raid nests; at least on occasion. Probably the most intriguing data from this report is the comparison of the snake's size to the prey size (Fig. 1, see page 4).

Submitted by BRECK D. BARTHOLOMEW and CYNTHIA LLEYSON, 195 West 200 North, Logan, UT 84321.

CAPTIVE CARE

NUTRITIONAL COMPOSITION OF VARIOUS FOODS FOR HERBIVOROUS REPTILES

Nutrient deficiency is one of the most common problems with captive herbivorous reptiles. Fortunately, this problem can be prevented by a well balanced diet and ultraviolet light. Another way to prevent nutrient deficiency is to add a vitamin and mineral supplement to the food. However, all of these preventive measures can be harmful in excess. For example, captive turtles often grow fast and develop pyramidal scutes because of an improper diet.

The following list is a summary of the composition of several foods often given to herbivorous reptiles from Fowler (1976) and Hansen et al (1976). The two studies used different methods to determine nutritional values and may not be comparable. The values of Fowler are in plain type, whereas Hansen et al. values are in bold.

Unfortunately, I do not have specific data on the nutritional needs of reptiles. I assume each species has different nutritional requirements.

Food	% Moisture	% Protein	% CHO	% Fat	% Fiber	% Ca	P	Vitamin A	Kcal/gm
Alfalfa hay	9.00	15.50	37.10	1.70	28.00	1.29	0.21	108.00	3.94
Alfalfa-fresh	75.30	4.40	9.80	0.60	7.50	0.38	0.07	56.20	1.96
Apples	84.40	1.10	85.50	3.60	6.40	0.04	0.06		
Bananas	75.70	3.00	62.10	0.60	2.50	0.02	0.07		
Bean sprouts	88.80	3.80	6.60	0.20	0.70	0.02	0.06	0.20	0.35
Beet greens	90.90	24.20	50.60	3.40	14.30	1.31	0.44		
Bermuda grass	63.30	11.60	50.00	2.10	25.90	0.53	0.22		
Blue grass	67.10	2.40	15.00	1.20	11.40	0.10	0.09	79.30	1.58
Blueberry	83.20	0.40	6.00	0.40					0.43
Broccoli	89.10	3.60	5.90	0.30	1.50	0.10	0.08	25.00	0.32
Cabbage	92.40	1.30	5.40	0.20	0.80	0.05	0.03	1.30	0.24
Cantaloup	91.20	7.80	85.10	1.40	6.80	0.16	0.18		
Carrots	88.20	8.40	73.10	1.50	8.50	0.28	0.27		
Clover hay	15.00	11.80	36.30	1.90	28.80	1.08	0.20	56.70	2.09
Clover-fresh	81.00	3.50	8.10	0.80	4.60	0.29	0.06	89.60	0.57
Collards	85.30	32.70	51.00	5.40	6.10	1.70	0.56		
Corn	72.70	7.00	44.50	2.00	2.90	0.01	0.22		
Cranberry	87.90	0.40	5.10	0.30					0.25
Dandelion	85.60	2.70	9.20	0.60	1.60	0.19	0.07	140.00	0.45
Endive lettuce	93.10	1.70	4.10	0.10	0.90	0.08	0.05		0.2
Garden cress	89.40	24.50	51.80	6.70	10.40	0.76	0.72		
Grapes	81.60	4.00	55.40	4.10	2.70	0.05	0.04		
Green beans	90.10	1.90	7.10	0.20	1.00	0.06	0.06		0.32
Iceberg lettuce	95.10	1.20	2.50	0.20	0.50	0.04	0.03	9.70	0.14
Italian squash	94.60	22.90	67.10	1.40		0.51	0.54		
Kale	82.70	34.60	52.00	4.60	7.50	1.44	0.54		
Mustard greens	89.50	3.00	5.60	0.50	1.10	0.18	0.05		0.31
Oat hay	9.30	7.70	45.70	1.90	27.90	0.22	0.20	79.30	2.4
Oats-fresh	79.10	2.20	9.80	0.70	2.00	0.18	0.16	1.45	1.16
Oranges	86.00	5.20	63.50	1.20	4.30	0.21	0.10		
Parsley	85.10	26.80	60.40	6.70	10.10	1.34	0.40		
Peaches	89.10	4.70	77.50	1.00	5.50	0.07	0.15		
Romaine lettuce	94.00	1.30	3.50	0.30	0.70	0.07	0.03		0.18
Spinach	90.70	3.20	4.30	0.30	0.60	0.09	0.05	70.00	0.26
Strawberries	89.90	6.70	79.90	4.70	13.90	0.20	0.20		
Swiss chard	91.10	27.00	51.70	3.50	9.00	0.99	0.44		
Tomatoes	92.40	1.30	5.50	0.20	0.60	0.02	0.03		0.26
Turnip greens	90.30	3.00	5.00	0.30	0.80	0.25	0.06	76.00	0.28
Watermelon	92.60	6.80	86.40	2.50	8.10	0.09	0.14		
Winter squash	94.00	1.40	12.40	0.30	1.40	0.02	0.04	37.00	0.5

Fowler, Murray E. 1976. Respiratory disease in captive tortoises. In N.J. Engberg, S. Allen, and R.L. Young (eds.) Desert Tortoise Council Proceedings of 1976 Symposium. pp. 89-98.

Hansen, Johnson, and Van Devender. 1976. As presented in the Utah Division of Wildlife Resources tortoise adoption packet. The reference is uncited.

UTAH MEETING: Wednesday, February 10th at 8:00pm in the U of U Biology seminar room (if you're not sure how to get there let me know and I'll send you directions). **Mark Nielsen** will present a talk on "**Accessory Respiratory Organs in Turtles.**" See you there!



Fig. 1. A rubber boa (*Charina bottae*) from Wasatch Co. and the five newborn pocket gophers (*Thomomys talpoides*) it regurgitated

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